

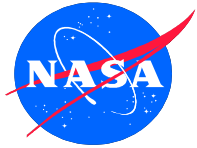
John F. Kennedy Space Center

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# Kennedy Space Center Engineering Services Contract (ESC)

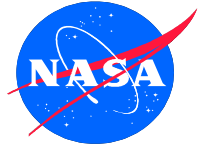
## Industry Day

## June 5, 2009



# Agenda

- Industry Day Overview – *Jack Fox*
- Constellation Ground Operations Project Overview – *Ruth Gardner*
- Constellation Space Transportation Program Overview – *Ed Mango*
- Engineering Services Contract Overview – *Jack Fox*
- Questions & Answers
- Lunch Break
- One-on-One Meetings begin at 12:00 p.m.

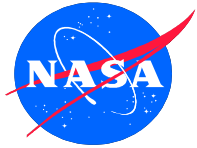


John F. Kennedy Space Center

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# Industry Day Overview

Jack Fox

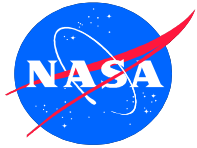


# Industry Day Overview

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- Goals of Industry Day:
  - Promote competition by providing industry a better understanding of the upcoming procurement
  - Provide industry a networking opportunity to build teaming arrangements
  - Provide an early opportunity for the Government to introduce preliminary aspects of the procurement and improve the acquisition strategy based on valuable industry feedback

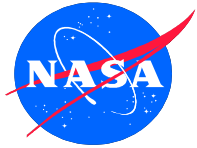




# Industry Day Overview (cont'd)

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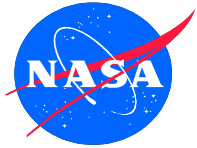
- General Information:
  - These slides are for information and general planning purposes only. No solicitation exists at this time.
  - This presentation shall not be construed as a commitment by the Government or as a comprehensive description of any future requirements
  - If a solicitation is released it will be synopsized at Federal Business Opportunities (FedBizOps) at <https://www.fbo.gov/> and NASA Acquisition Internet Service (NAIS) at <http://prod.nais.nasa.gov/>



# Industry Day Overview (cont'd)

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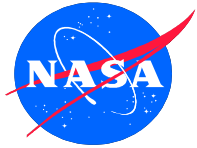
- Questions and Answers
  - Questions today will be submitted on the note cards provided. (Prepared questions on sheets of paper will be accepted, too.) Government may address some questions verbally today.
  - Questions and answers will also be posted to the ESC procurement website at <http://esc.ksc.nasa.gov>. These written answers will be the official response.
  - If a difference exists between verbal and written responses to questions, the written responses shall govern.



# Industry Day Overview (cont'd)

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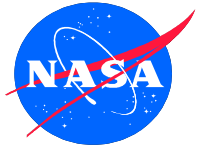
- One-on-One Sessions
  - Purpose is to provide individual interested parties an opportunity to share information with procurement team members
  - Sessions will be limited to 25 minutes
  - Tables 1-5 are in the next room
  - Additional questions submitted on note cards or sheets of paper are welcomed



# Industry Day Overview (cont'd)

---

- The services to be provided by the ESC will be:
  - Engineering development of ground support systems and equipment for handling, test, checkout, servicing and other ground processing of launch vehicles and spacecraft/payloads
  - Space flight systems sustaining engineering support
  - Laboratories and developmental shops operations, maintenance and services
  - Operations technologies for rapid response, life cycle cost reduction, and future operations
  - Cross-cutting technical services



# Industry Day Overview (cont'd)

---

- Intended customers of these Institutionally-provided engineering services include:
  - Constellation Ground Operations Project (GOP)
  - Constellation Space Transportation Program (CSTP)
  - Center Management & Operations (CMO)
  - Exploration Technology Development Program (ETDP)
  - Space Shuttle Transition & Retirement (T&R)
  - Launch Services Program (LSP)
  - NASA Innovative Partnerships Program (IPP)
  - NASA Office of Chief Engineer (OCE)

*Overview*

# Constellation Ground Operations Project



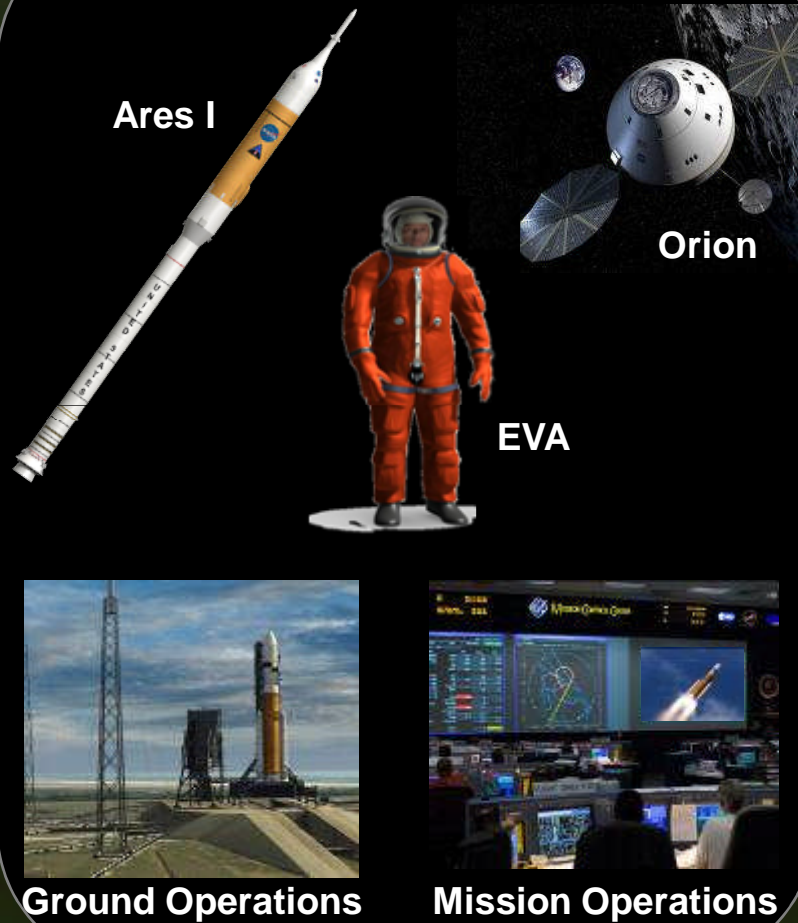
June 2009

10

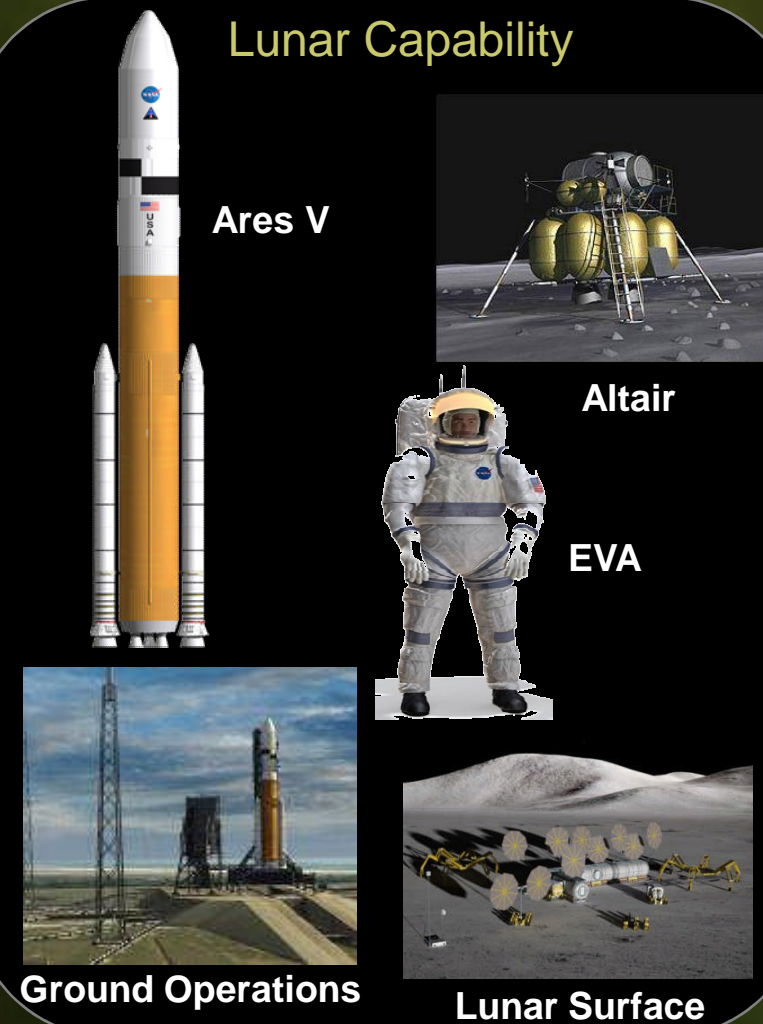


# Systems of the Constellation Program

## Initial Capability



## Lunar Capability



# MAP OF CONSTELLATION CONTENT ACROSS NASA



## Ames

- Lead Thermal Protection System Advanced Development Program
- Aero-Aerothermal database
- Ares Abort simulations
- Software and Guidance, Navigation & Control support

## Glenn

- Lead Service Module and Spacecraft Adapter integration
- Flight Test Article "Pathfinder" fabrication
- Ares I-X upper stage simulator lead
- Ares power, thrust vector control and sensors lead
- J-2X altitude/in-space testing
- Systems Engineering & Integration support

## Langley

- Lead Launch Abort System integration
- Lead landing system Advanced Development Program Ares I-X vehicle integration
- Ares aerodynamics lead
- Systems Engineering & Integration support

## Goddard

- Communications Support

## Marshall

- Home for Ares Project
- Ares I and V development and integration lead
- LAS and SM Systems Engineering & Integration Support

## Kennedy

- Home for Ground Ops Project
- Ground processing
- Launch operations
- Recovery operations

## Stennis

- Rocket Propulsion Testing for Ares

## Johnson

- Home for Program
- Home for Projects: Orion, Mission Ops, EVA, Lunar Lander
- Lead Crew Module integration
- Orion Spacecraft Integration
- GFE projects management
- Flight Test Program

## Dryden

- Lead Abort Flight Test Integration/Operations
- Abort Test Booster procurement
- Flight Test Article
- Development/Integration

## JPL

- Thermal Protection System support

Pratt Whitney  
Rocketdyne

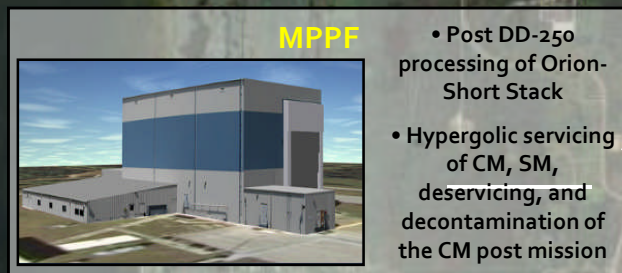
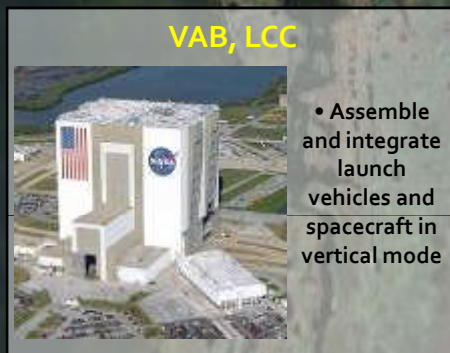
ATK

Lockheed  
Martin

Boeing



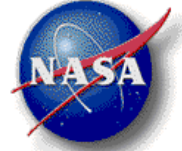
# GOP Facility Overview



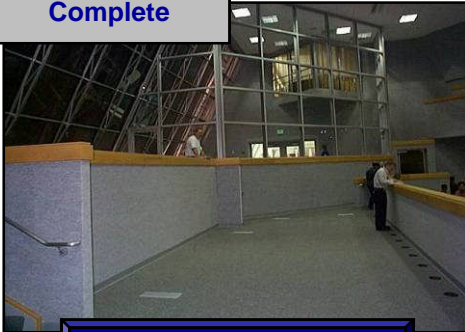




# Ground Systems Implementation Ares I-Y Development Projects



Construction  
Complete



LCC FR-1 Modifications

Construction  
Started



Pad 39B Modifications

Construction  
Started



Mobile Launcher  
Development

Design in Work



VAB High Bay 3  
Modifications & GSE

Construction  
Started



Hangar AF Modifications & GSE

Design in Work



MPPF Modifications &  
Orion GSE

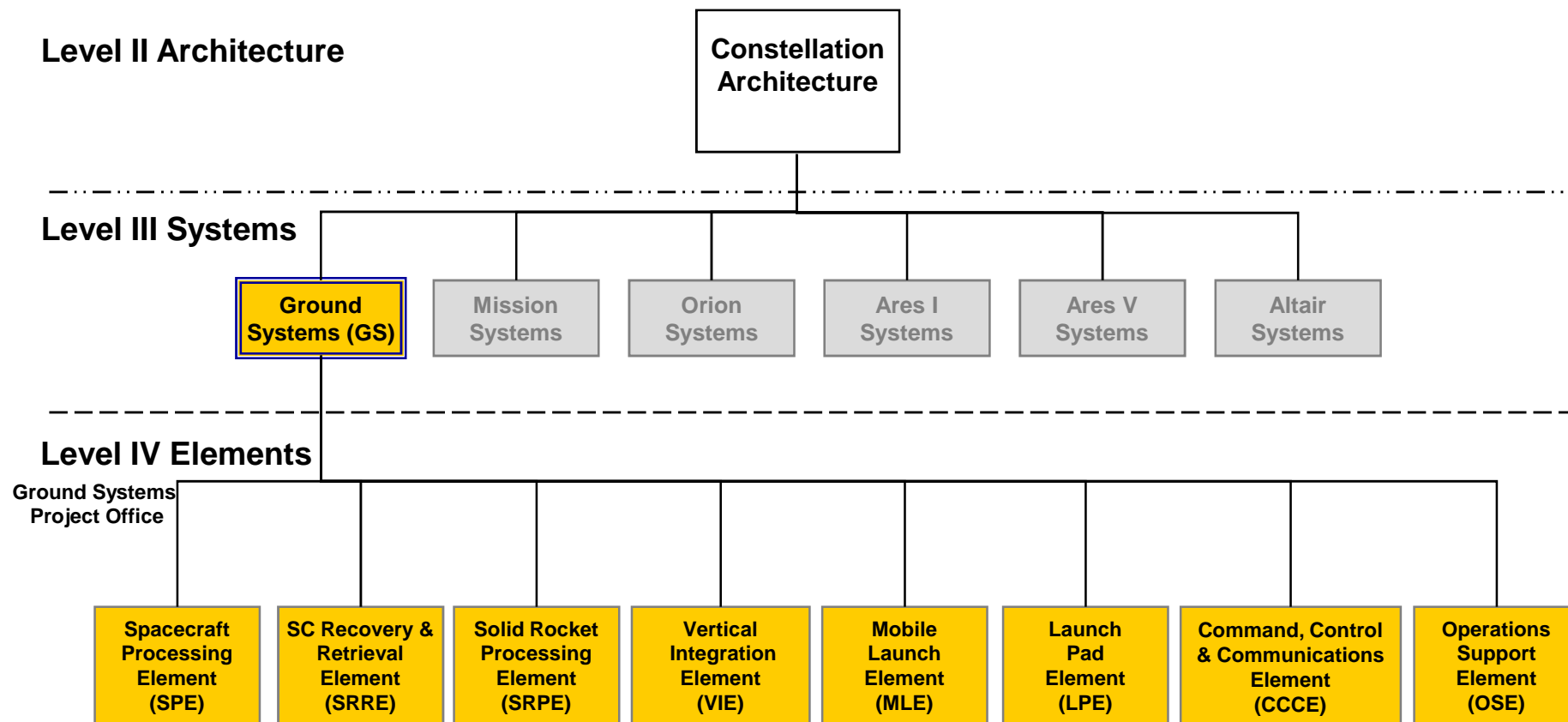
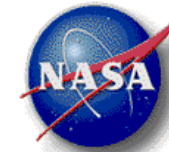
Design in Work



Launch Control System (LCS)  
Development

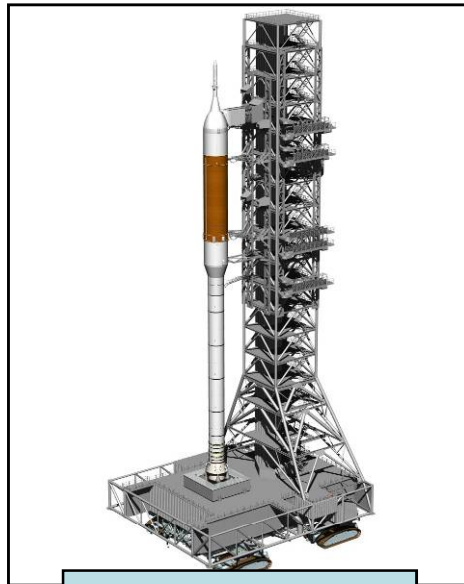


# Ground Systems (GS) Architecture Overview





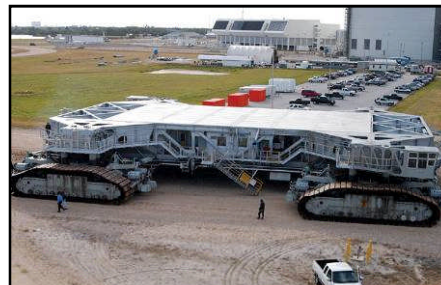
## Mobile Launcher Element (MLE)



**ML Concept**

### Overview

- New Mobile Launcher (ML) being designed and built for Ares I / Orion integrated stack
- ML Base (MLB) provides interfaces to pad
- ML Tower (MLT) allows all ground interfaces to be mated and checked out in the VAB, minimizing pad time and exposure
- Crawler-transporter to be re-used at existing load capacity



**Existing  
Crawler Transporter**



**Tilt Up Umbilical Assembly  
LETF Prototype Testing**



**ML Girders  
Arriving at ET Barge Terminal**

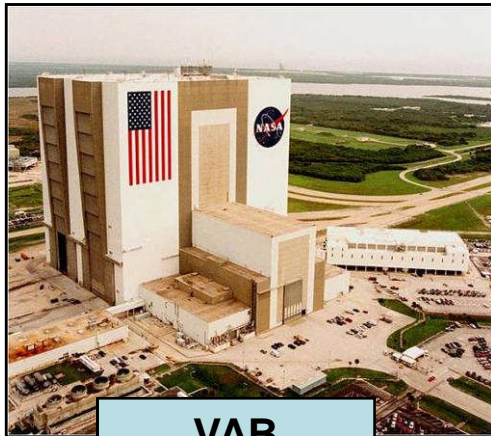


**ML Girders  
At MLP Park Site**

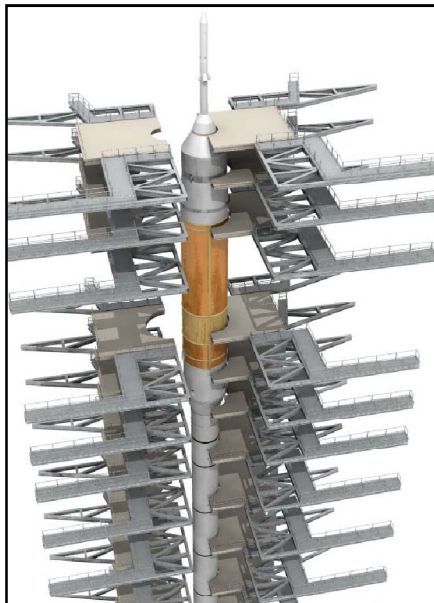




## Vertical Integration Element (VIE)



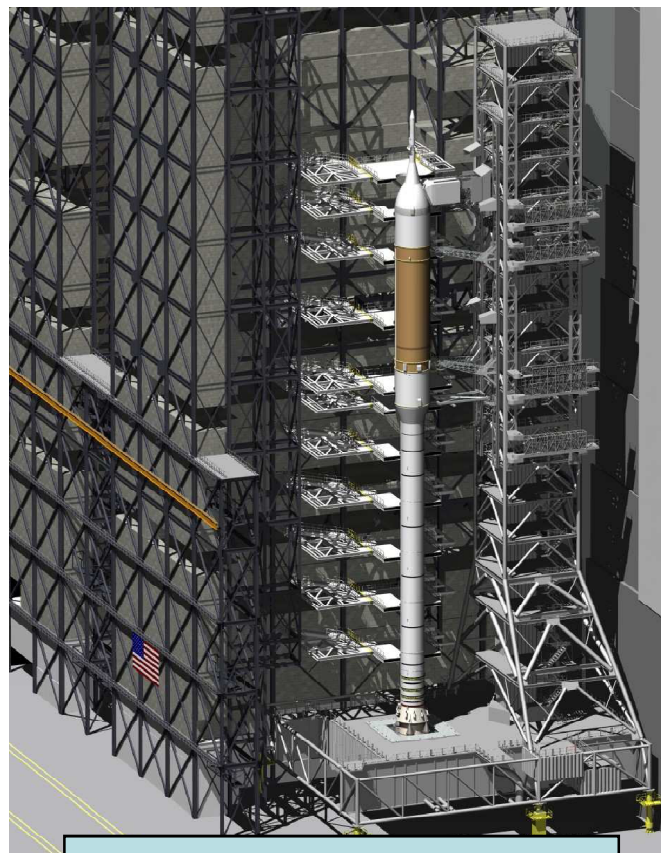
**VAB**



**VAB  
Access Platforms**

### Overview

- VAB High Bay-3 will be modified for Ares I and Orion stacking; Ares V baselined in VAB HB-1



**VAB HB3  
With ML and Ares/Orion Stack**



**Access GSE**





## Launch Pad Element (LPE)



**Pad Concept**

### Overview

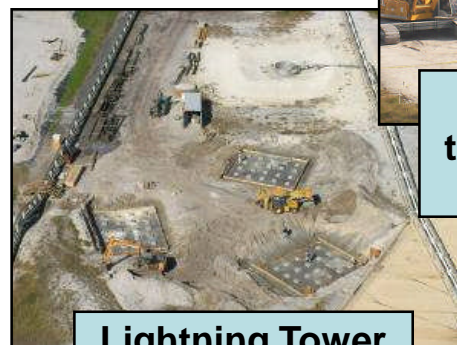
- Launch Pad 39B 'clean pad' concept minimizes pad time and services
- Major modifications include a new three-tower lightning protection system, demolition of the FSS/RSS, and a new emergency egress system
- Minimal changes to cryogenic systems, ML interfaces, and other systems



**EES  
Mockup**



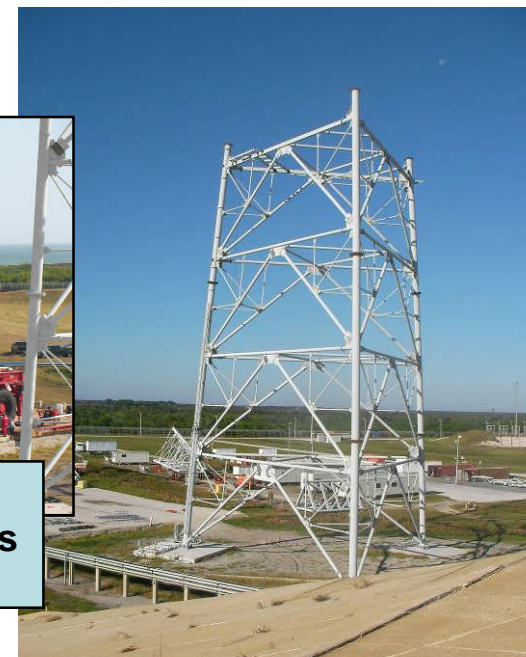
**EES Concept**



**Lightning Tower  
Foundations**



**Large Crane  
to erect upper sections  
of the Towers**



**Lightning Protection System**





## Command, Control and Communications Element (CCCE)



**Shuttle Firing Room 1**



**Demolition  
of Shuttle Firing Room 1**



### Overview

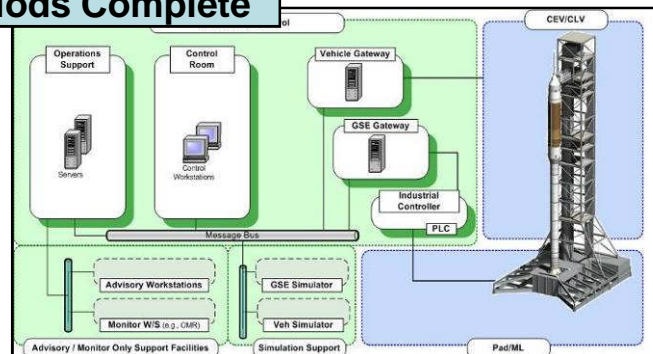
- Scope includes complete refurbishment of LCC FR-1
- Development of new Launch Control System (LCS) for launch operations and offline processing



**Firing Room 1  
Facility Mods Complete**



**LCS  
Architecture**

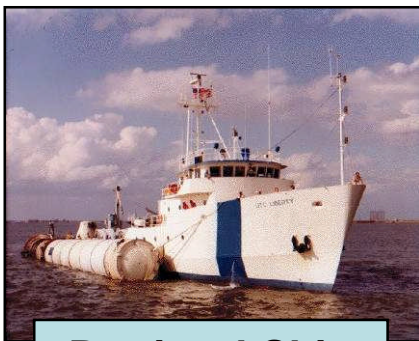




## Solid Rocket Processing Element (SRPE)



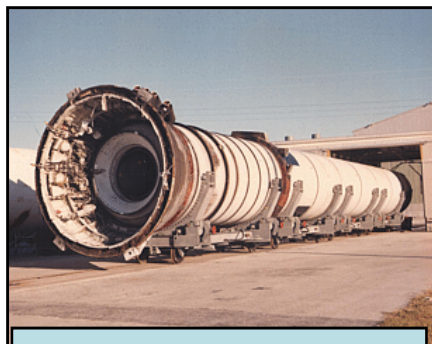
**RPSF**



**Retrieval Ship**

### Overview

- SRPE encompasses facilities and equipment required to process Ares I first stage and Ares V SRB's
- Ares I scope includes Hangar AF modifications supporting SRB retrieval and recovery and GSE modifications to the Rotation Processing and Surge Facility (RPSF)



**Hangar AF Wharf**



**Hangar AF Door Refurbishment  
Phase I Refurbishment Mods**

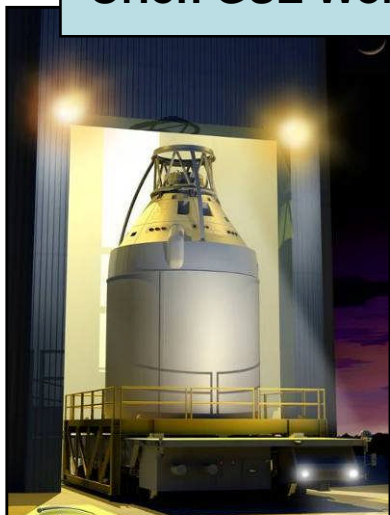




## Spacecraft Processing Element (SPE)



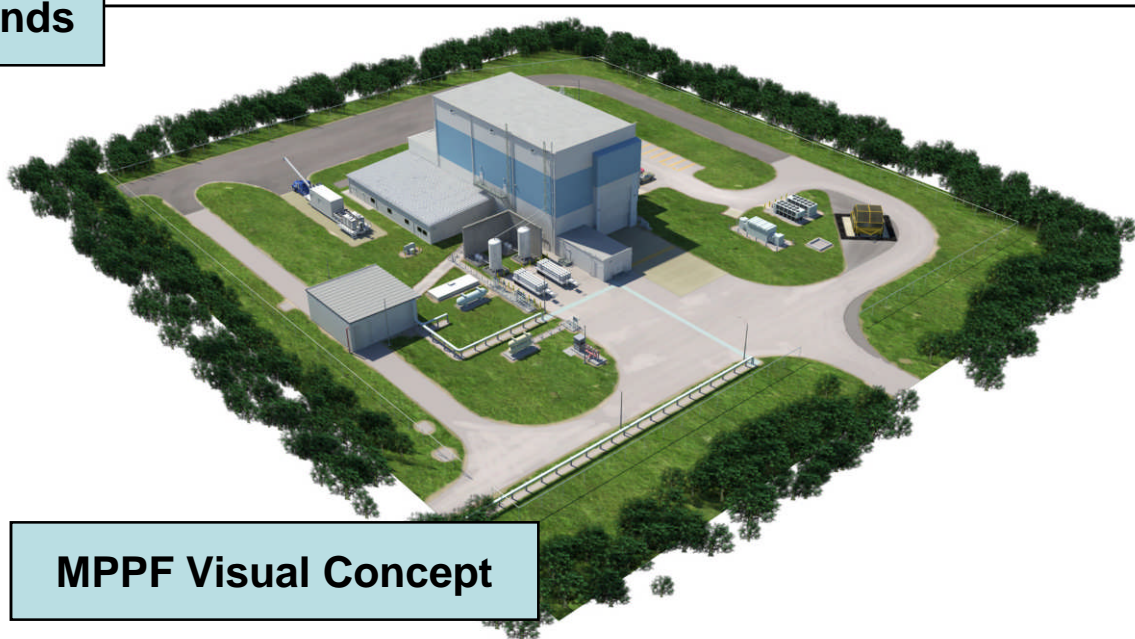
**Orion GSE Workstands**



**Orion Transporter**

### Overview

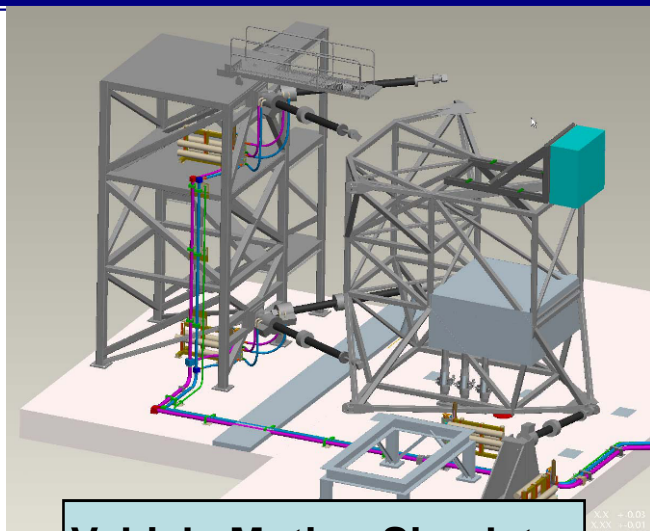
- MPPF and GSE will support offline processing of the Orion CM-SM 'short stack'
- Hazardous processing of the Orion will include loading of hypergol propellants, high-pressure gases, and potentially other operations.
- Post-mission CM de-servicing in MPPF
- MPPF will be outfitted for hazardous operations and GSE will be provided to access the vehicle at the needed locations



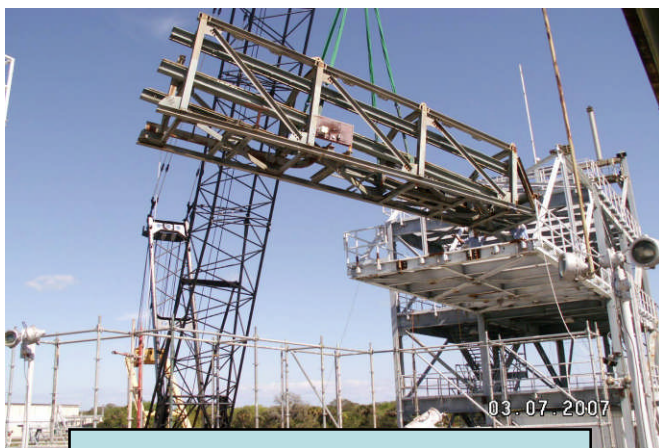
**MPPF Visual Concept**



## Launch Equipment Test Facility (LETF)



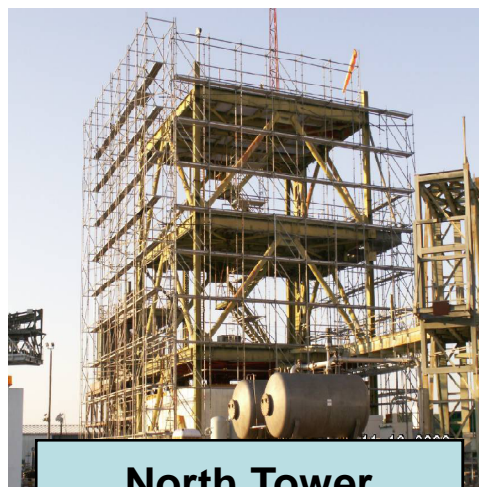
**Vehicle Motion Simulator  
Motion and Static Structures**



**Centaur Rolling Beam  
Removal**

### Overview

- The Launch Equipment Test Facility (LETF) supports a wide spectrum of testing and development activities, such as qualification of umbilicals and T-0 release mechanisms



**North Tower  
Refurbishment**



**North Tower  
Sandblasting & Painting  
Complete**



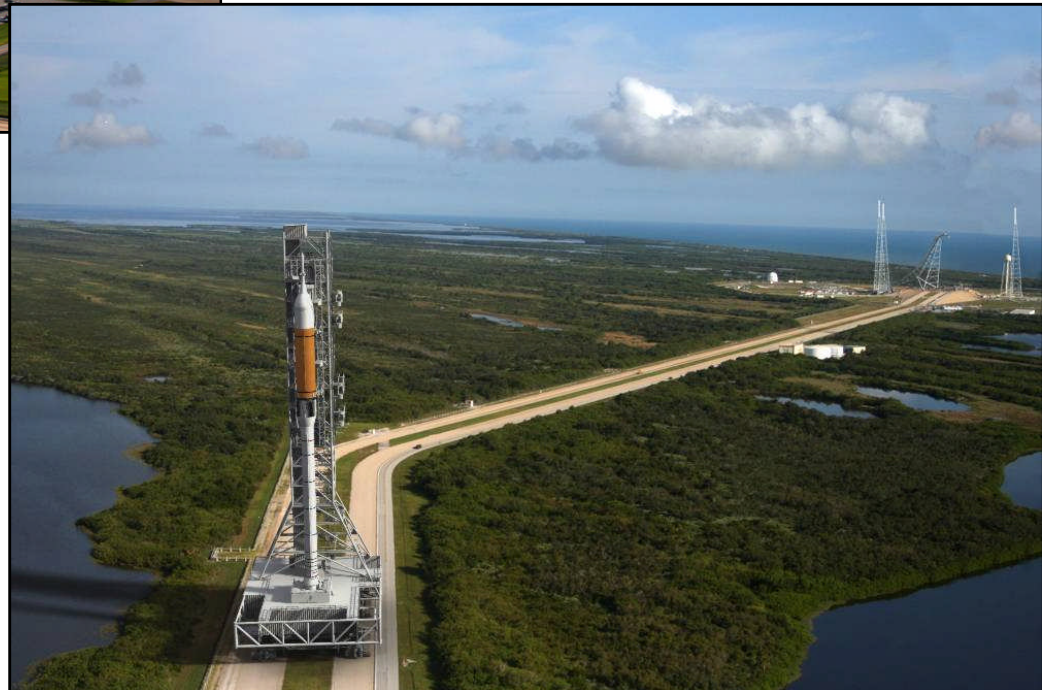
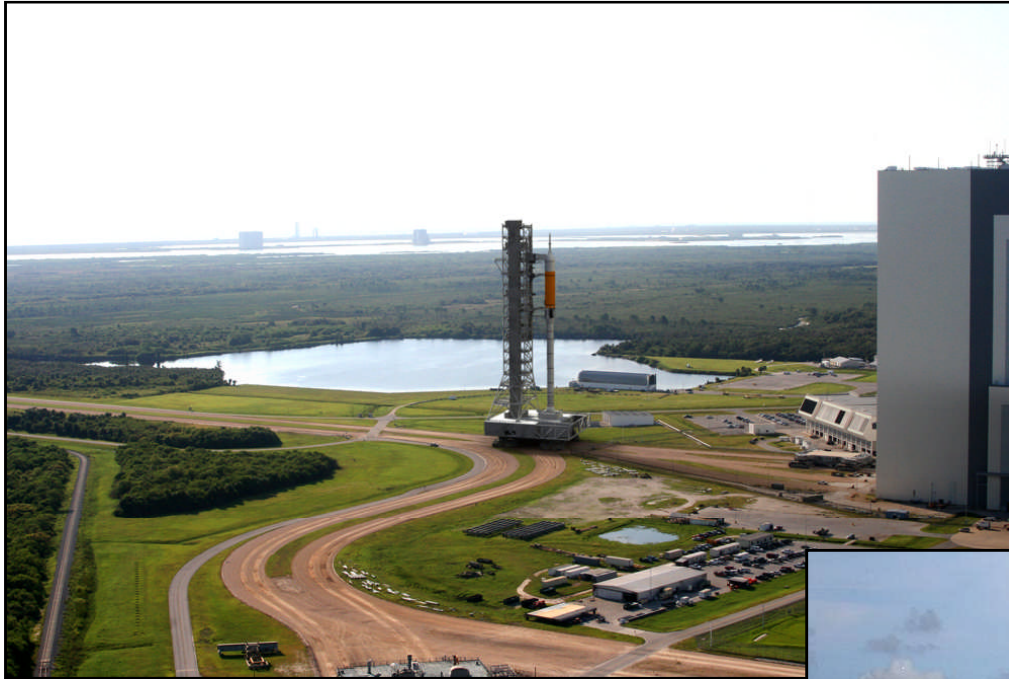
**Refurbished Control Room**





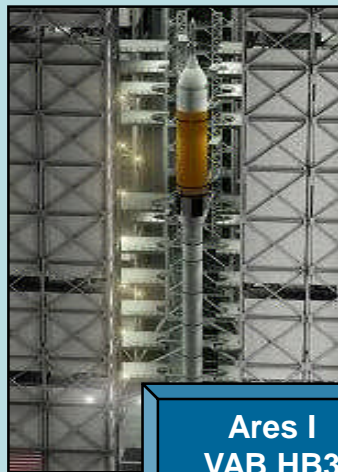


## Ares I/Orion – Initial Capability



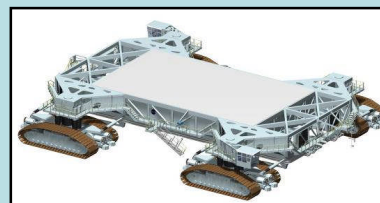


# Ground Systems Architecture Baseline



Ares I  
VAB HB3

Ares I  
New ML

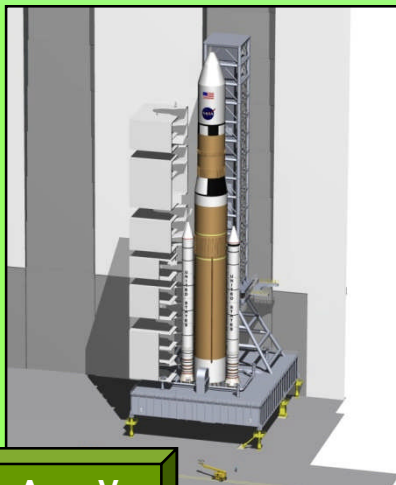


Ares I  
Crawler-Transporter

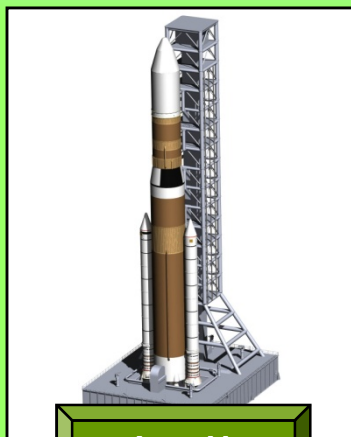


Ares I  
Pad 39B

Ares I baseline is single-string – **2013** ORD



Ares V  
VAB HB1



Ares V  
Modified ML



Ares V  
Crawler-Transporter

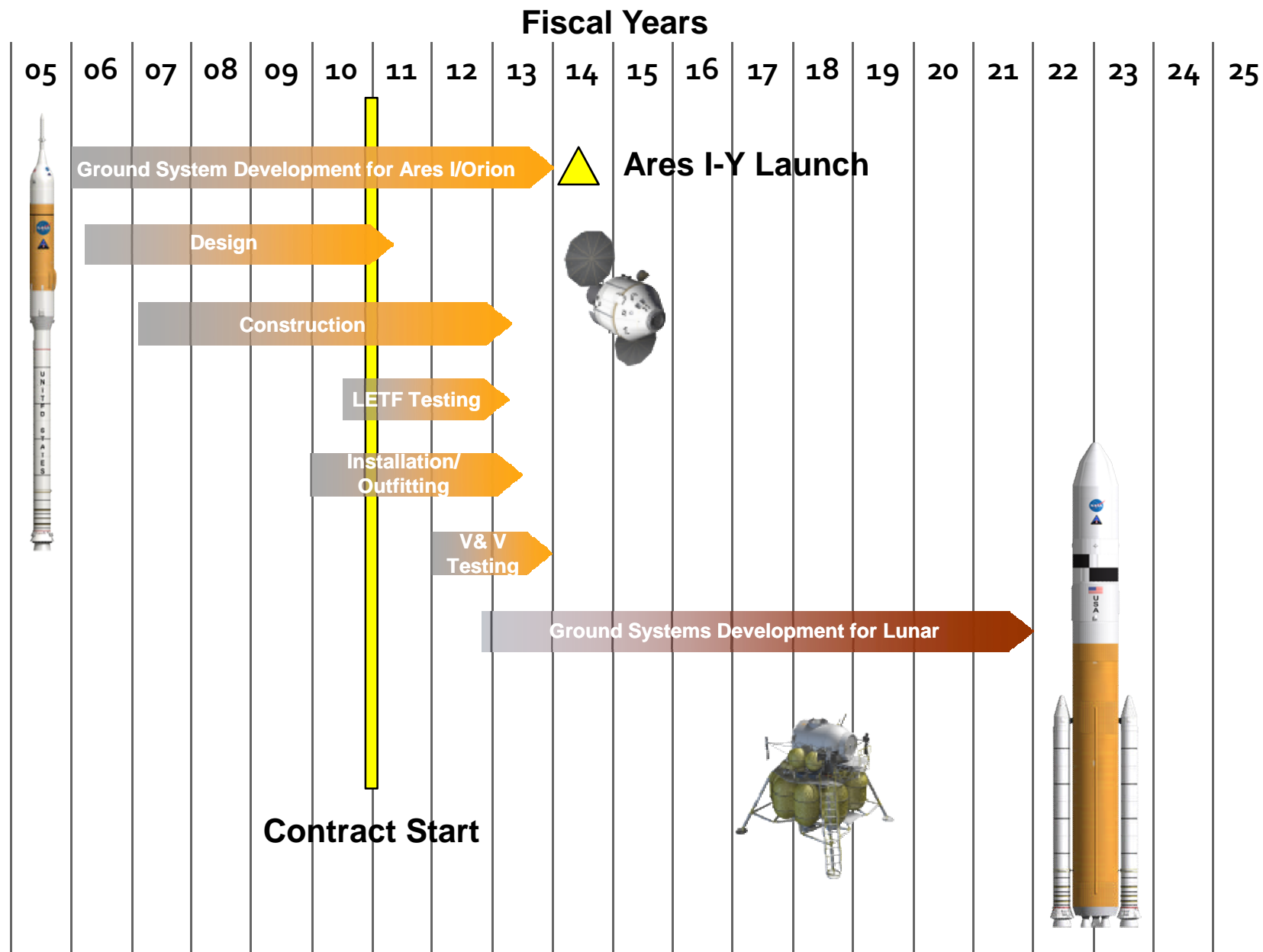


Ares V  
Pad 39A

Ares V baseline is single-string with future added capability



# Constellation Ground System Development Schedule





## ESC Scope in support of Constellation Ground Systems Development

---

- Provide Engineering Services for the design and development of Ground Systems and Equipment for handling, test, checkout, servicing, launch, and post launch recovery of Constellation launch vehicles and spacecraft at KSC and recovery sites.
  - Trade Studies
  - Requirements
  - Design
  - Analysis
  - Proof of Concept Prototypes
  - Fabrication and Assembly
  - Testing,
  - Delivery and Installation, Field Engineering Support
  - Craft Labor
  - Verification Testing, Validation Testing Support to O&M entities, Certification and Turnover to O&M entities
  - Sustaining Engineering
  - Expert Troubleshooting Services
  - Ground Support Equipment Acquisition Planning and Tracking



# ***Constellation Space Transportation Planning Office***

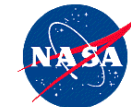
## **Purpose and Overview**

**Ed Mango**

ESC Industry Day – June 5, 2009



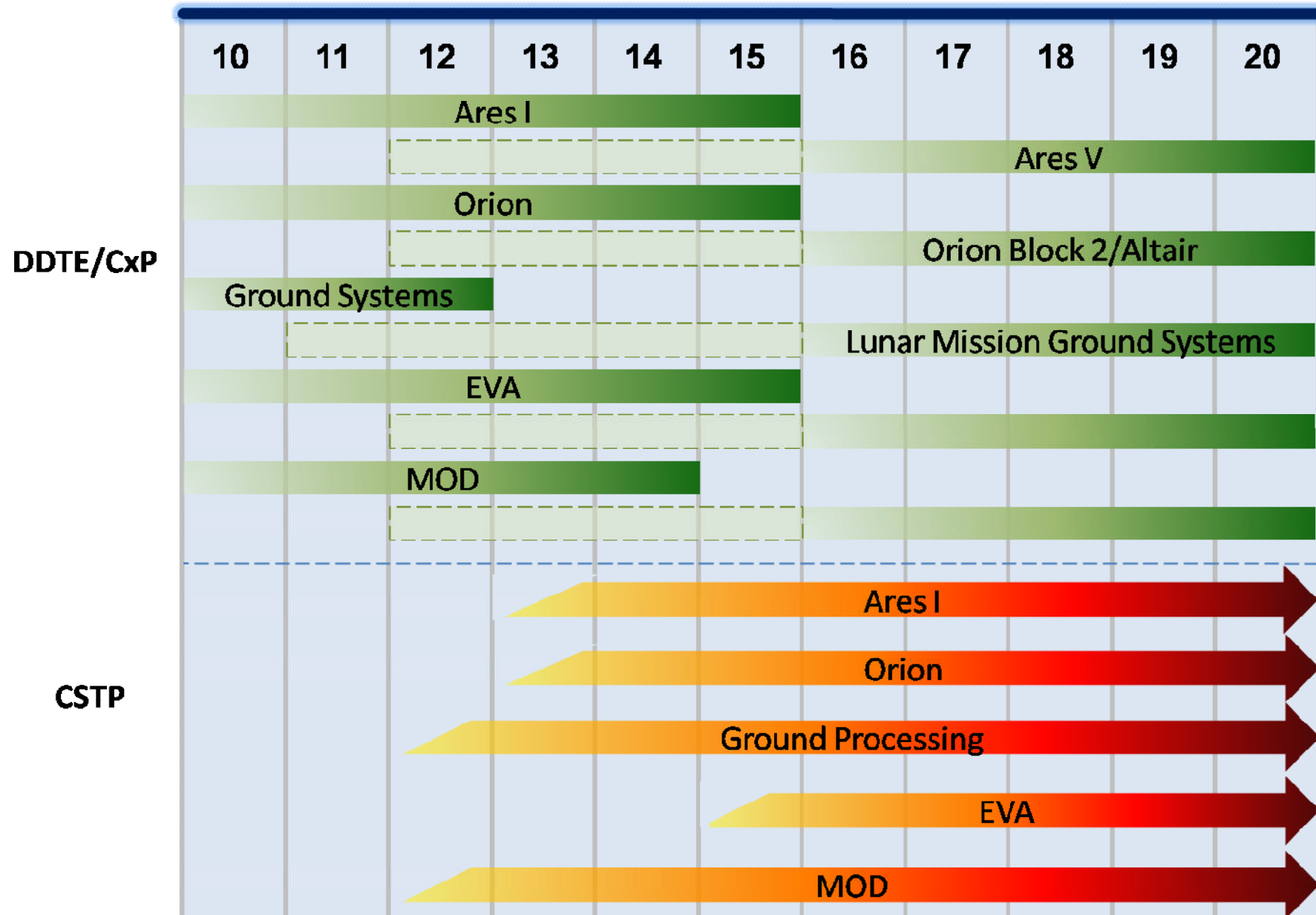
# Charter



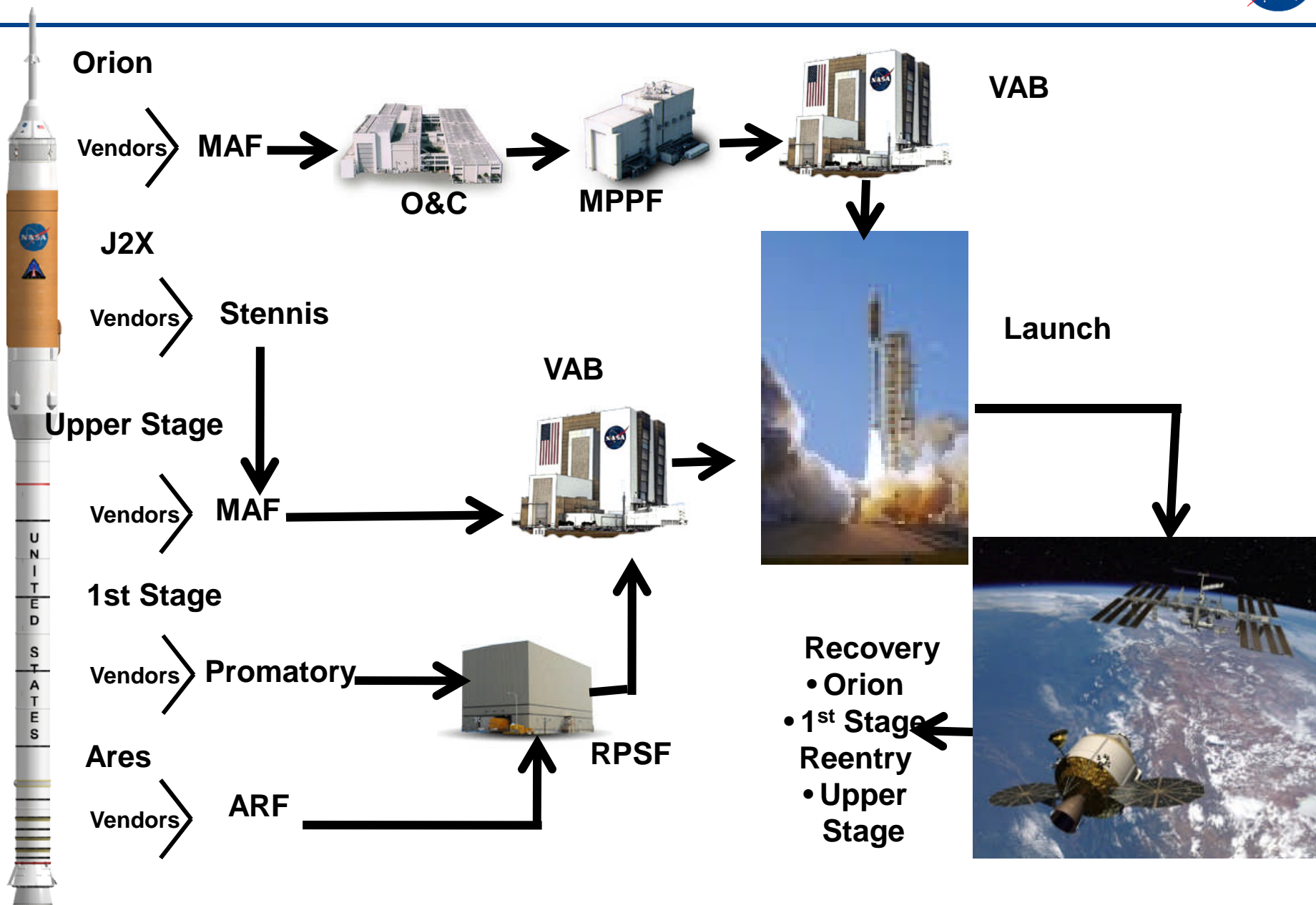
- NASA has established a counterpart to the Constellation DDTE Program for Production, Operations and Sustaining
- Constellation Space Transportation Planning Office
  - Charter:
    - Lay the groundwork for the Constellation Space Transportation Program
    - Work within the Agency Governance Structure to establish Engineering; Safety; and Health and Medical Technical Authorities
    - Work with the Cx Program and Projects to establish the needed relationships including the Mission Operations Directorate at the JSC
- Constellation Space Transportation Program
  - Charter:
    - Manage the production, sustaining engineering, launch preparations, and recovery of the Ares I/Orion vehicle configuration that will transport crew safely to/from the ISS



# Constellation Evolution



# Ares/Orion





# Status of CSTP Implementation Plan

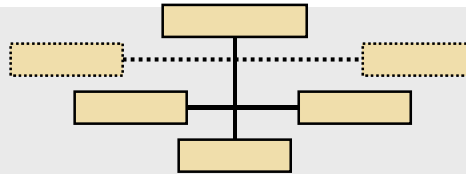
Effective November 23, 2008

FY09



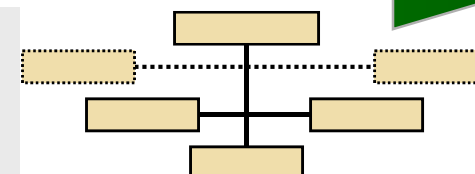
- ✓ Establish Planning Office
- Prepare PCA for approval
- ✓ Prepare draft FAD
- ✓ Identify/Assign Key Personnel
- ✓ Engage CSTP SPM,SSM, SMA with Cx Projects
- Initiate definition of Program Processes
- Initiate Multi-Center agreements for Program support
- Initiate CSTP WBS Structure with CxP
- ✓ Begin Production contract strategy discussion
- ✓ Draft CxP to CSTP handover plan (collaborative agreements)
- ✓ Initiate Operability White Paper
- ✓ Prepare initial CSTP level II FY10-15 resource req'ts.
- ✓ Ops. & Int. Mgr. at JSC

FY10



- Assign SE&I Lead
- Assign Resource Management Lead
- Partner Chief Engineer/ETA Assignment
- Partner Chief Safety Officer/STA Assignment
- Continue Program Planning, Prepare Program Plan
- Develop System Integration Plan
- Expand Interaction with Cx Projects
- Define Processes
- Define Inter-Center Task Agreements
- Work Contract Structure
- Define Production Structure

FY11



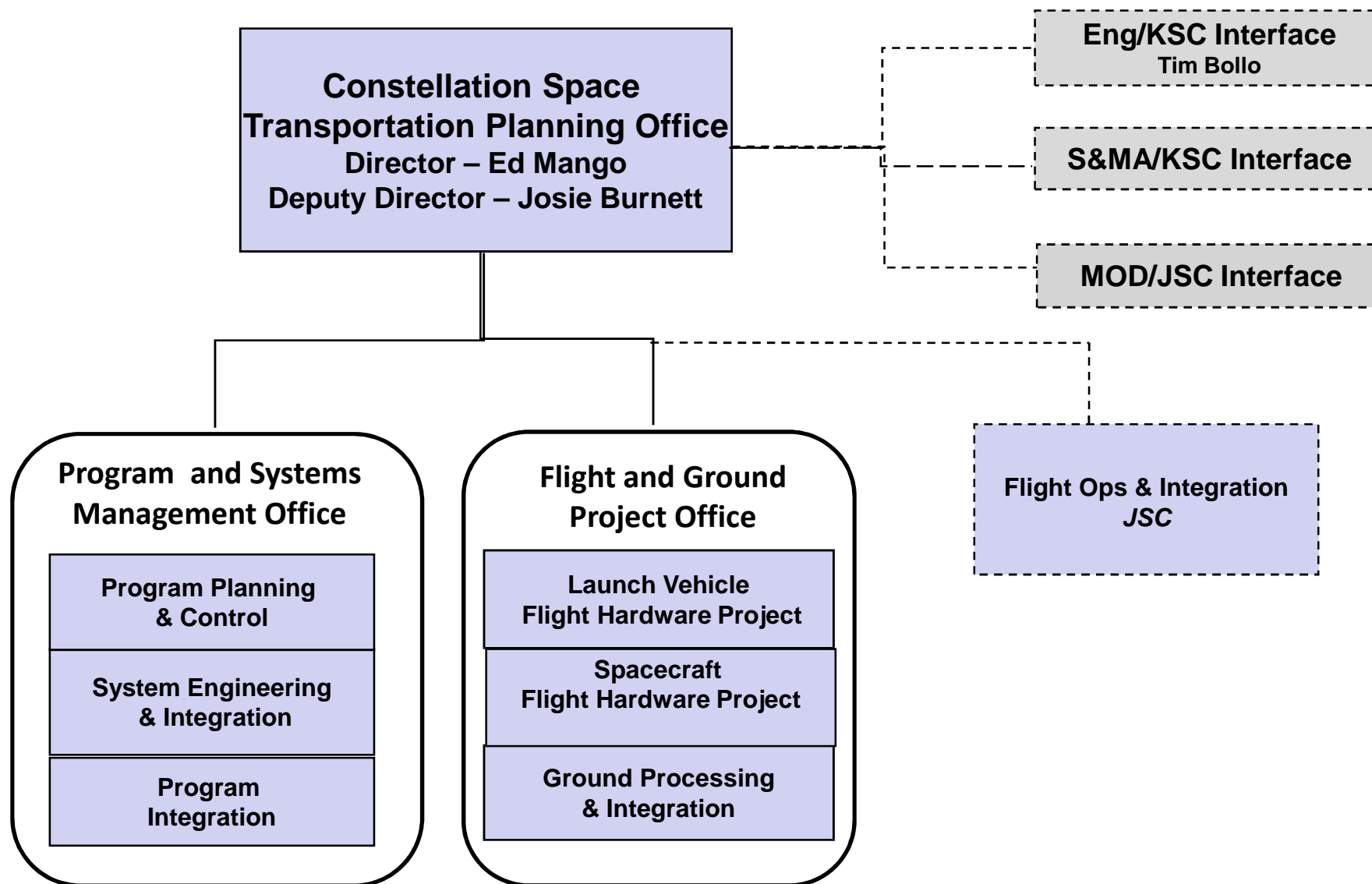
- Establish Project Offices/Managers
- Assign System Project Managers
- Partner Sub-System Managers assignments
- Partner SMA personnel assignments
- Establish Sharing for DDTE Production Engineering with MSFC and JSC
- Facility and System O&M
- Support T&E Flight Tests
- Initiate Flight/Mission Planning

FY12...

Added since CSTP Implementation Plan

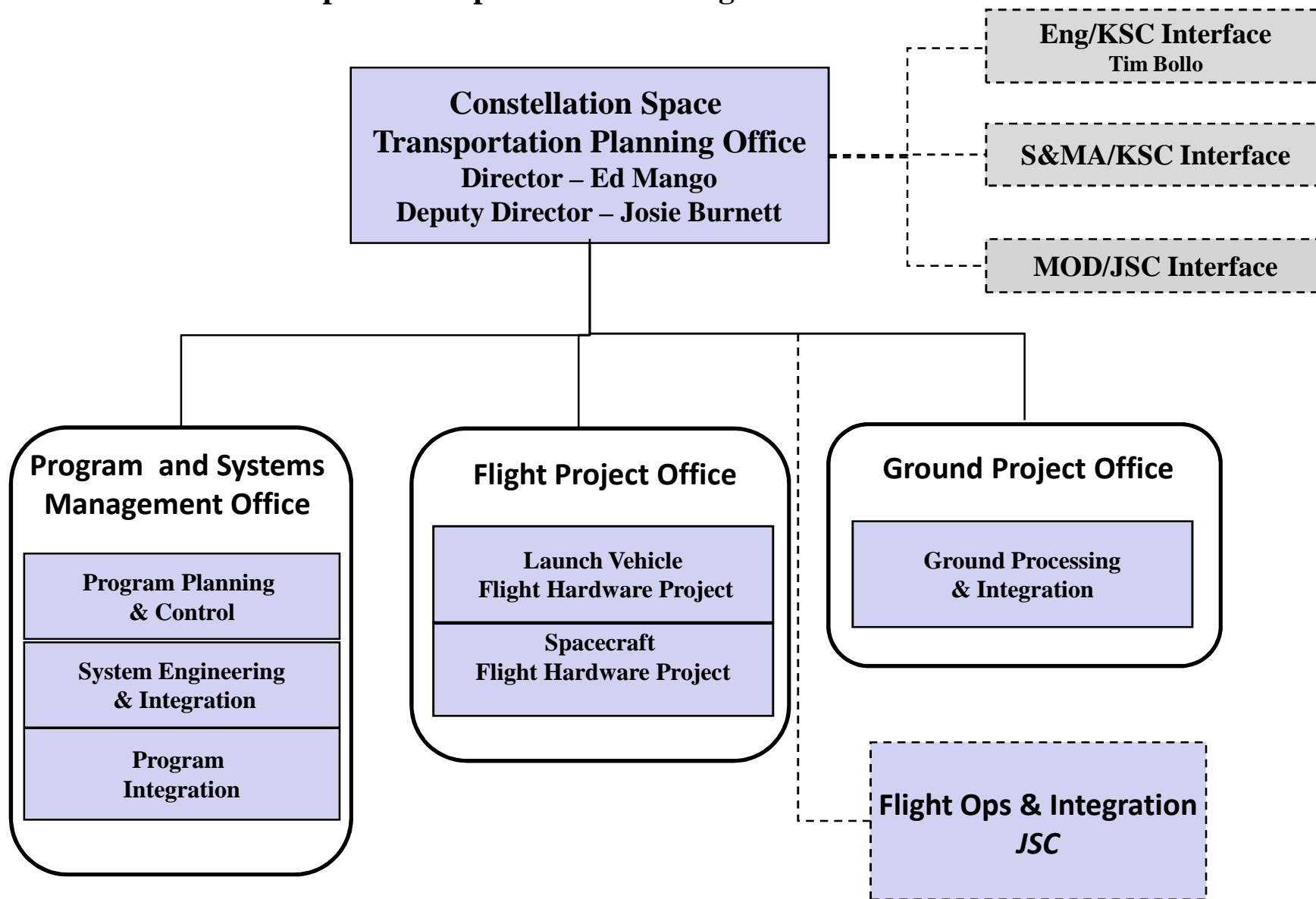


## Constellation Space Transportation Planning Office – Functional FY09 - FY10

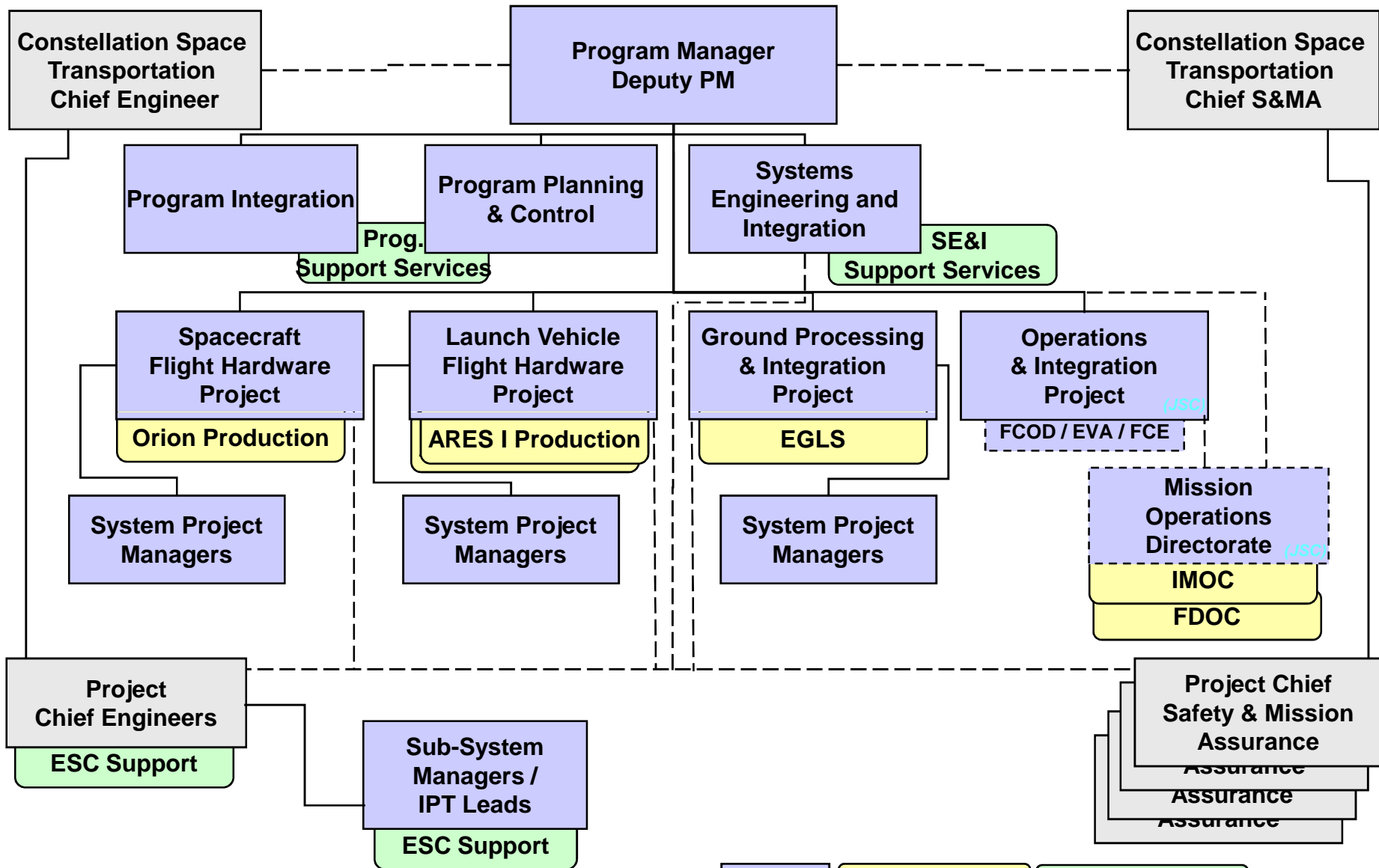




## Constellation Space Transportation Planning Office – Functional FY11



# Constellation Space Transportation Program – End State

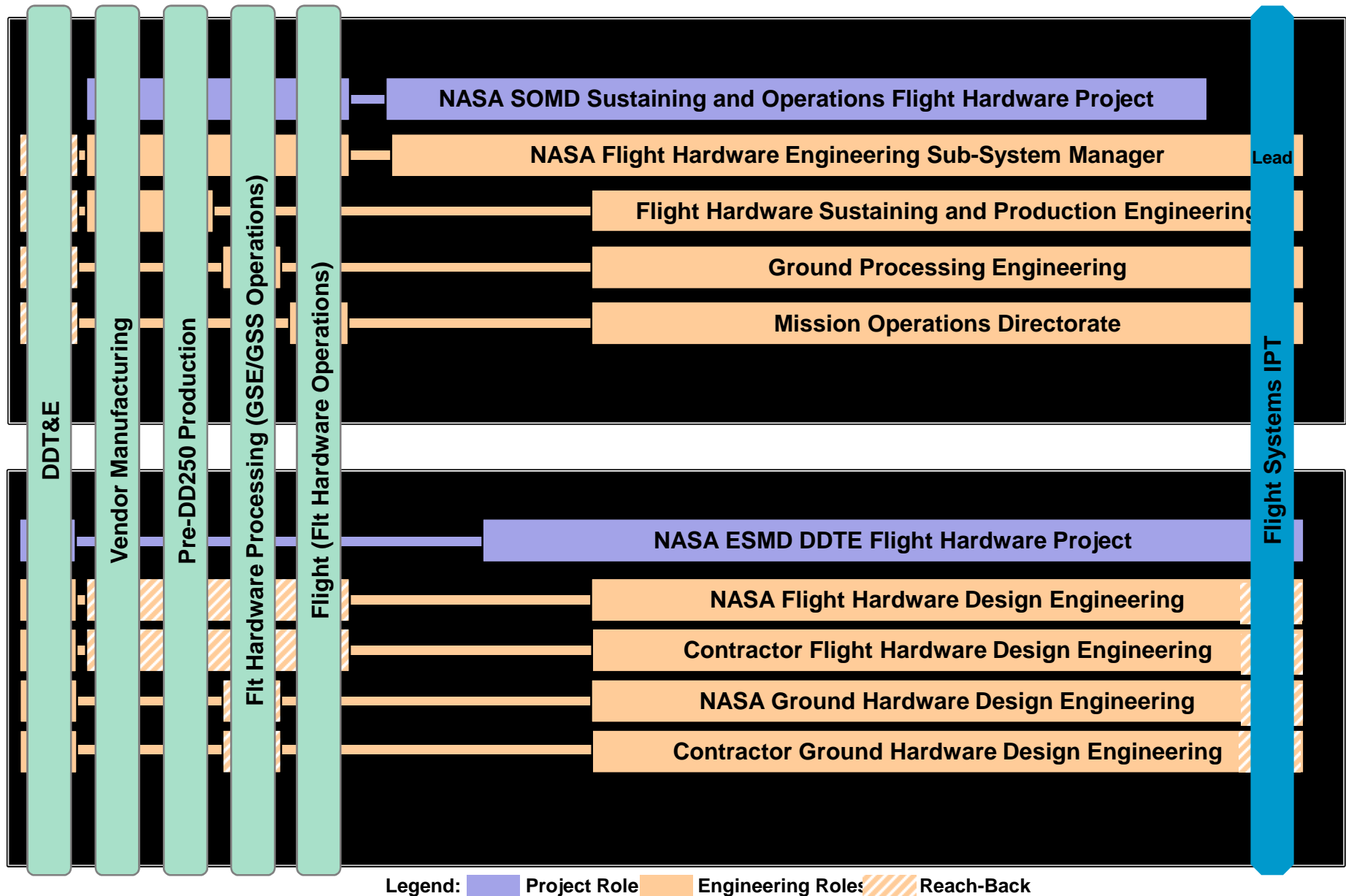


Legend: NASA Prime Contract Support Contract —Matrix

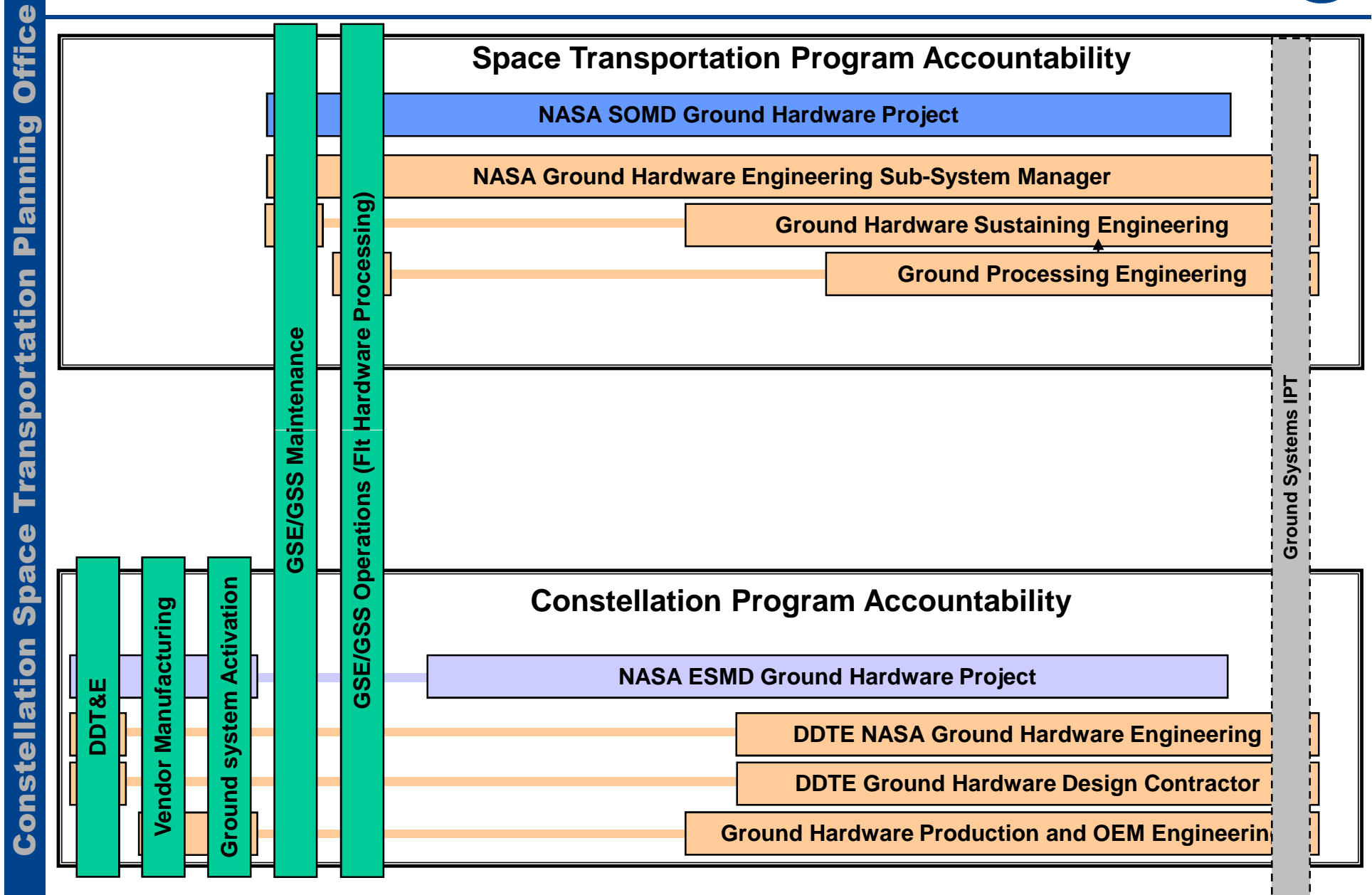


# Flight Hardware Responsibility Through Life-Cycle

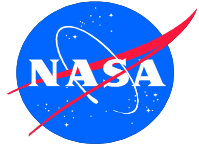
Constellation Space Transportation Planning Office



# Post-Act/Val Ground Hardware Functional Responsibility

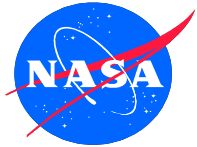






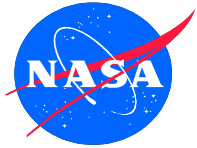
# Engineering Services Contract (ESC) Overview

Jack Fox



# ESC Overview

- ESC Scope
  - Baseline Content
    - Laboratories and Developmental Shops Operations and Maintenance
  - Work initiated through Task Orders
    - Engineering Development
    - Space Flight Systems Sustaining Engineering Support
    - Operations Technologies
    - Technical Services



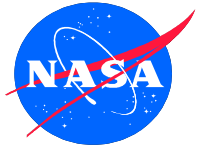
## ESC Overview (cont'd)

- Set-Aside Opportunities
  - A determination has not been made regarding set-aside opportunities
  - In the event this requirement is solicited on an unrestricted basis, NASA will strive to maximize small business participation through subcontracting goals
- Bidder's Library
  - Available on-line through ESC procurement website at: <http://esc.ksc.nasa.gov>
  - Will continue to add material as required



# ESC Overview (cont'd)

- Procurement Schedule
  - Draft Performance Work Statement (PWS) Release June 4, 2009
  - Industry Day #1 June 5, 2009
  - Draft RFP Release no earlier than Sept. 30, 2009
  - Industry Day #2 no earlier than October 1, 2009
  - Final RFP Release no earlier than January 4, 2010
  - Proposals Due no earlier than March 5, 2010
  - Contract Award Announcement no earlier than July 1, 2010
  - Contract Start no earlier than October 1, 2010
- Updates to the procurement schedule will be posted on the ESC procurement website as they become available
- A five year base period of performance is under consideration. Additional one year options are also under consideration.
- Estimated contract value is in excess of \$100M per year



## ESC Overview (cont'd)

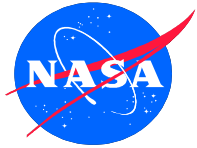
- Work For Others (WFO)
  - NASA KSC is interested in limited WFO activities that would utilize excess capabilities in facilities and in the NASA and contractor workforce at KSC
    - It should be recognized that today, very little excess capabilities exist in the NASA KSC workforce
  - WFO is considered to be a direct arrangement between the ESC contractor and a third party
  - All WFO is subject to NASA KSC approval
  - All WFO shall conform to KSC standards such as Safety & Health
  - NASA KSC has no intention of funding or incentivizing WFO outreach activities directly or indirectly
  - Safe and successful conduct of ESC work is a significantly higher priority than WFO





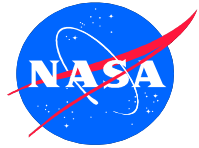
# ESC Overview (cont'd)

- Procurement Objectives
  - Provide a means to retain critical contractor skills in the post-Shuttle era
  - Design and Development of Ground Systems and Equipment for CxP Ground Operations Project at KSC is in-work. This support is currently through University-Affiliated Spaceport Technology Development Contract (USTDC). The planned contract end is 9/30/10 and need smooth transition of this work from USTDC to ESC.
  - Geyer/Hawes recommendations included post-DDT&E NASA-led Flight Hardware Sustaining responsibilities assigned to KSC, need contractor support to this activity
  - Life Sciences Support Contract (LSSC) expires and some laboratory operations & maintenance and applied research & technology development content targeted for ESC



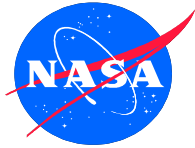
# ESC Overview (cont'd)

- Procurement Objectives (cont'd)
  - KSC Laboratory Capabilities Committee (KLCC) is evaluating existing labs and shops capabilities for possible consolidations, closures and other efficiencies.
    - Intent is Institutional Laboratories and Developmental Shops are in ESC and Program Operations/In Situ Laboratories and Shops are in EGLS
    - Encourage ESC Offeror approaches for additional efficiencies
  - Incentivize safe and successful performance
  - Maximize competition to draw out innovative approaches
  - Provide a surge capability to support the engineering civil servant workforce through periods of peak needs
  - Provide a capability to allow the engineering civil servant workforce to focus on the more critical/high energy systems and inherently governmental tasks
  - Encourage small business participation



# ESC Overview (cont'd)

- Engineering Development of Ground Systems and Equipment for handling, test, checkout, servicing and other ground processing of launch vehicles and spacecraft/payloads
  - Trade Studies
  - Requirements
  - Design
  - Analysis
  - Proof of Concept Prototypes
  - Fabrication and Assembly
  - Testing, Verification Testing, Validation Testing Support to O&M entities
  - Delivery and Installation
  - Craft Labor
  - Sustaining Engineering
  - Expert Troubleshooting Services



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# ESC Overview (cont'd)

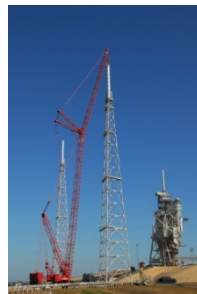


## Multi-Payload Processing Facility

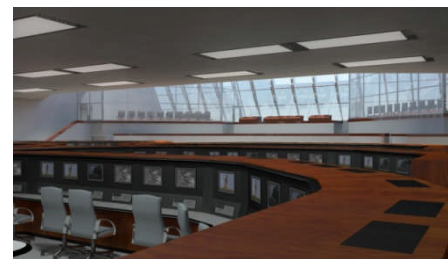
- Hypergols Subsystem
- Handling Equipment
- Access Platforms



**Mobile Launcher  
under construction**



**Structural analysis for  
Lightning Towers**



**Control Room  
under development**

## Mobile Launcher/Pad/VAB

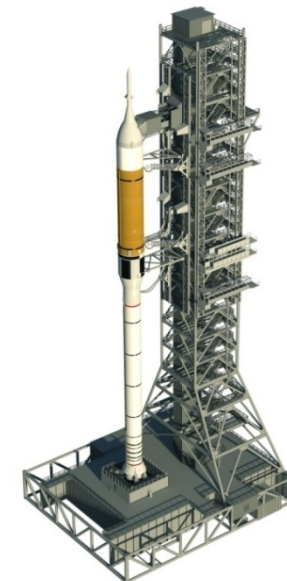
- Hypergols Subsystem
- LH2/LO2 Subsystems
- Environmental Control Subsystem
- GHe/GN2/GO2 Subsystems
- Breathing Air Subsystem
- Crew Access Arm
- Launch Mount
- Hazardous Gas Leak Detection Subsystem
- Launch Release Subsystem
- Access Platforms
- Ground Special Power
- Range Safety Checkout System
- KSC Complex Control System (KCCS)
- KSC Ground Control System (KGCS)

## Umbilicals

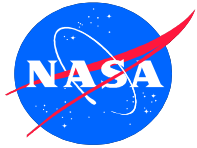
- Service Module
- First Stage Fwd Skirt Avionics
- First Stage Aft Skirt Electrical
- First Stage Aft Skirt Purge
- Upper Stage LO2
- Upper Stage Instrumentation Uni
- Upper Stage LH2



**Tilt-Up  
Umbilical Arm (TUUA)**



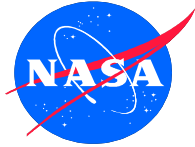




# ESC Overview (cont'd)

## Space Flight Systems Sustaining Engineering

- Background: Integrated Product Teams (IPTs) will be led by NASA Subsystem Managers (SSMs) with membership as required from KSC Ground Processing, EGLS, KSC Engineering, ESC, CSTP SE&I, Design Centers and OEMs
  - Depending on the issue at-hand, SSMs will reach-back as required
  - Intent is eventually, post-DDT&E, all SSMs are NASA KSC, but likely some SSMs will be located at Design Centers due to specialized skill requirements (e.g. propulsion), frequent reach-back needs, etc.
  - Intent is that NASA expertise Agency-wide will be leveraged to the fullest extent possible before funding contractor support
  - Intent is that over-time more responsibilities are pushed toward KSC Ground Processing and EGLS as knowledge base of flight hardware behavior grows (i.e. growth in standard repairs)
  - NASA KSC Flight Program System Engineers (FPSEs) are currently integrated into Ares and Orion Design, Development, Test & Evaluation (DDT&E) teams to build knowledge base
  - NASA KSC Engineering also growing Flight Systems Analysis capability
  - The focus of KSC Ground Processing/EGLS is on test, checkout, servicing, launch and recovery within to-be-established parameters (OMRSD, LCC, etc.)



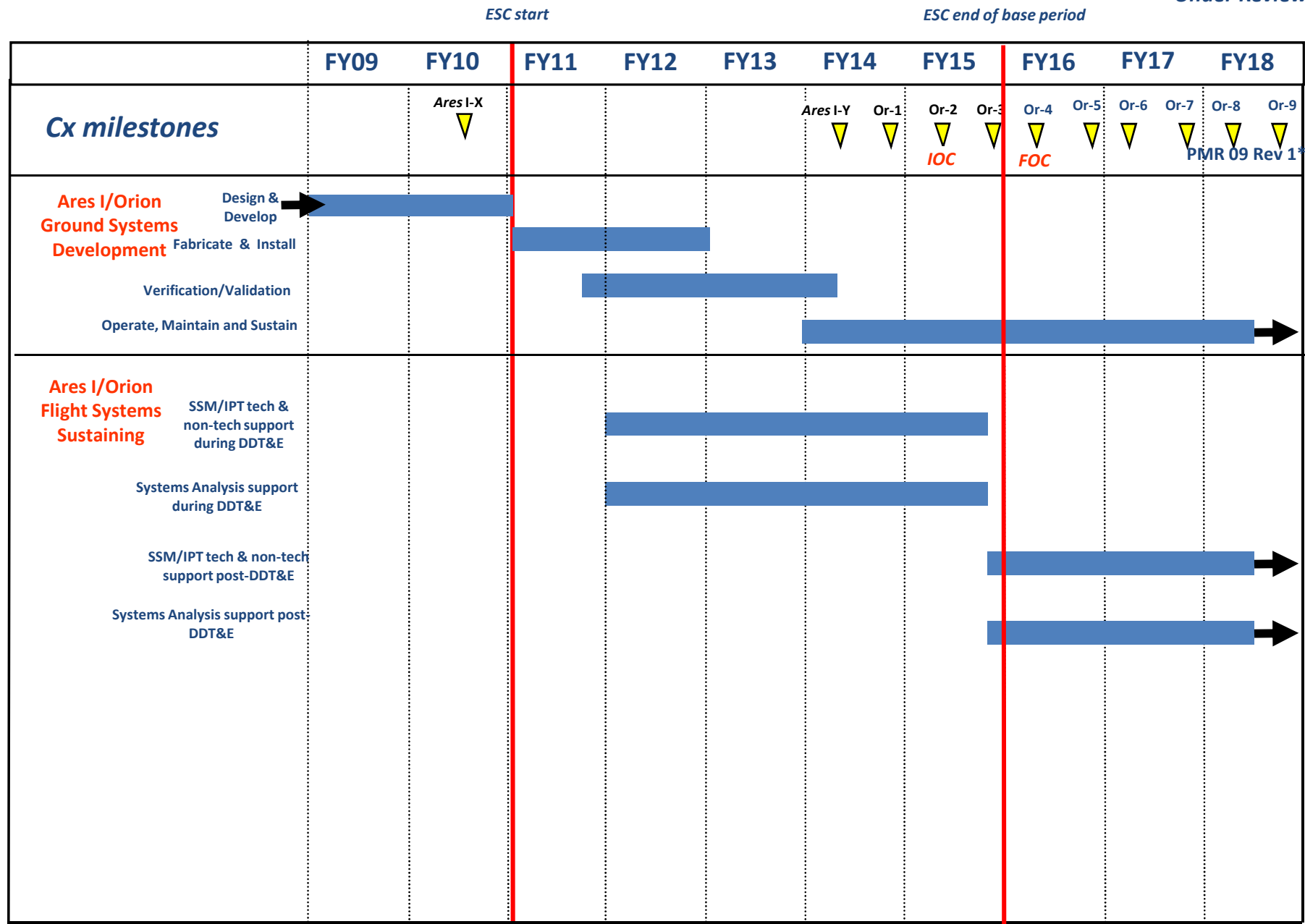
# ESC Overview (cont'd)

## Space Flight Systems Sustaining Engineering (cont'd)

- NASA Engineering to address flight hardware and software issues that arise outside of established parameters (Qual limits, OMRSD, standard repairs, LCC, etc.) as well as perform special studies. Areas of interest include production activities at component-level vendors, subsystem vendors, vehicle providers and spacecraft/payload providers as well as into ground operations, launch operations, mission operations and recovery operations.
- NASA Engineering to provide complete assessments of analytical items including: Loads and Structural Dynamics, Dynamic Environments, Stress, Flight Design, Flight Software, Controls and Stability, Thermal/Thermodynamics, Electromagnetic Compatibility and Computational Fluid Dynamics (CFD)/Aerodynamics. Will perform analyses and independent assessments of analyses performed by OEMs, Design Centers, vehicle/spacecraft/payload providers, CSTP SE&I, EGLS, etc.
- ESC provides surge capabilities to support the NASA workforce via Task Orders for flexibility as specific roles & responsibilities are developed and evolve over time

# Ares I/Orion Flight and Ground Systems

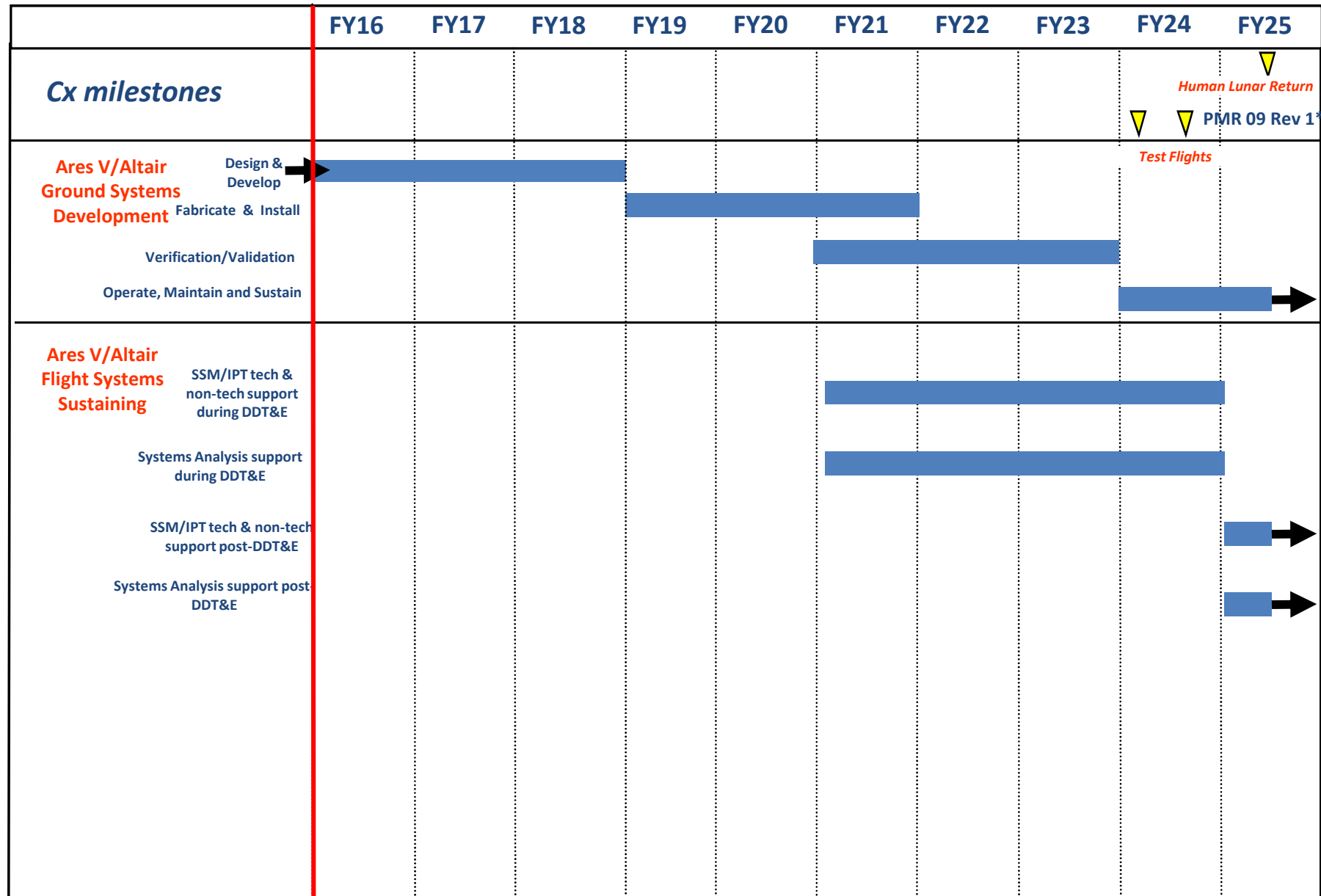
*\*Under Review*



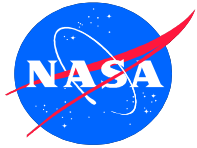
# Ares V/Altair Flight and Ground Systems

*\*Under Review*

*ESC end of base period*







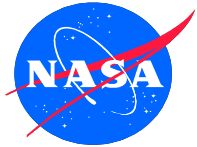
# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance

- IT/Communications
  - Experimental Imaging Lab
  - Advanced Network Development Lab
  - IT Systems Services Infrastructure Lab
  - Fiber Optics and Communications Lab
  - Launch Control System (LCS)
  - Electrical Magnetic Interference Testing Lab
    - Part of the current Electromagnetic Lab (EML) currently in CAPPS with plans to move to Information Management & Communications Support (IMCS) contract, under consideration to move to ESC as Option starting in FY14



**Experimental  
Imaging Lab**



# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance (cont'd)

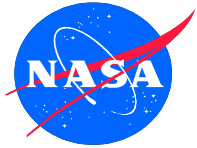
- Physical Sciences
  - Applied, Biological, and Analytical Chemistry Lab
  - Cryogenics Test Lab
  - Applied Physics Lab
  - Electrostatics and Surface Physics Lab
  - Granular Mechanics Lab
  - NDE Lab
    - Includes lab in VAB currently operated by USA
    - Under consideration to move to ESC as Option in FY14 is lab near LCC currently in Institutional Services Contract (ISC)
    - Under consideration to move to ESC as Option in FY14 is lab in Hangar N operated by USA



**Granular Mechanics Lab**



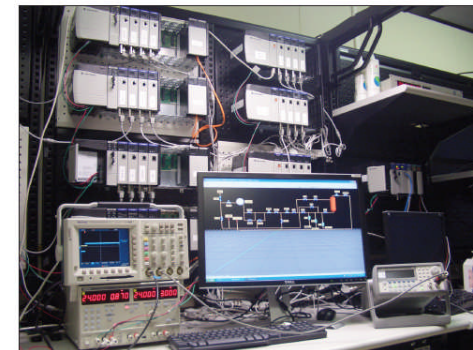
**Cryo Test Lab**



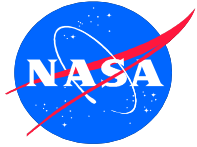
# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance (cont'd)

- Electrical
  - Sensors and Transducers Development Lab
  - Instrumentation and Data Acquisition Lab
  - Electronics Development Lab
  - Control Systems Development Lab
  - Power Development Lab
  - Embedded Software Development Lab
  - Range Technologies Lab



**Control Systems  
Development Lab**



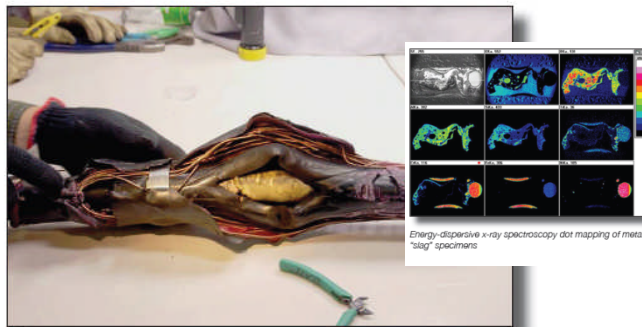
# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance (cont'd)

- Material Properties
  - Corrosion Lab
  - Mechanical Testing Lab
  - Exposure Lab
  - Metrology and Mechanical Failure Analysis Lab
  - Materials and Processes Lab
    - Under consideration to consolidate Hangar M Annex and O&C capabilities into O&C



**Mechanical  
Testing Lab**

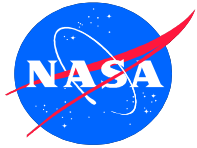


**M&P Lab**



**Corrosion Lab**

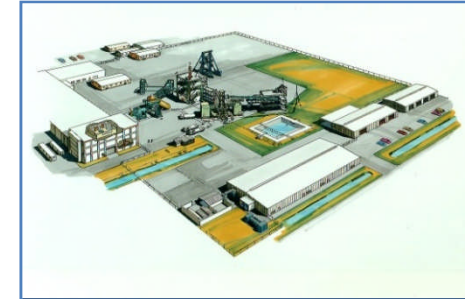




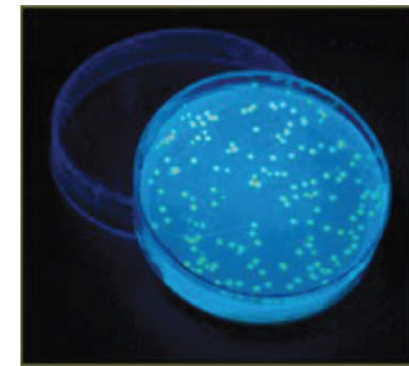
# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance (cont'd)

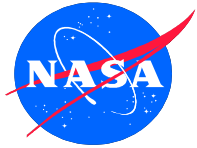
- Biology
  - Lighting Testbed
  - Low Pressure Testbed
  - Micro and Molecular Biology Lab
  - Control Chambers Lab
  - Water Processing Lab
- Payloads
  - Payloads Development Lab
- Developmental Shops
  - Launch Equipment Test Facility (LETf)
  - Engineering Development Machine Shop



**Launch  
Equipment  
Test Facility  
(LETf)**



**Micro and  
Molecular Biology  
Lab**



# ESC Overview (cont'd)

## Laboratories and Developmental Shops Operations and Maintenance (cont'd)

- Standards & Calibration
  - Standards Lab (Electrical, Physical)
  - Calibration Lab (Electrical, Physical, In-Situ)
- Chemical
  - Chemical Analysis and Sampling Lab
  - Component Cleaning and Refurbishment Lab

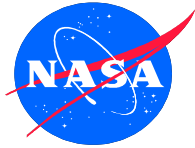


**Chemical Analysis  
and Sampling Lab**

All of the above are currently in Institutional Services Contract (ISC), Option to move to ESC starting in FY14



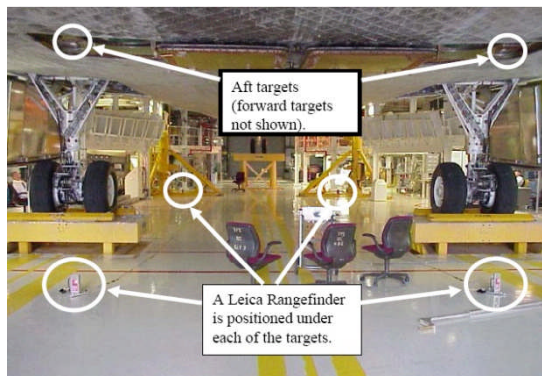
**Calibration Lab**



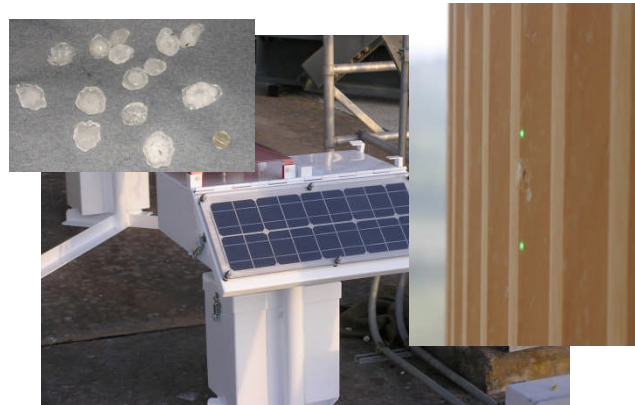
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# ESC Overview (cont'd)

Operations Technology Development in support of KSC Programs, KSC Institution and other NASA Programs through special projects for Immediate Response, Life Cycle Cost Reduction, and Future Operations



**Applied Physics Lab (APL) –  
Vehicle Positioning Tool**



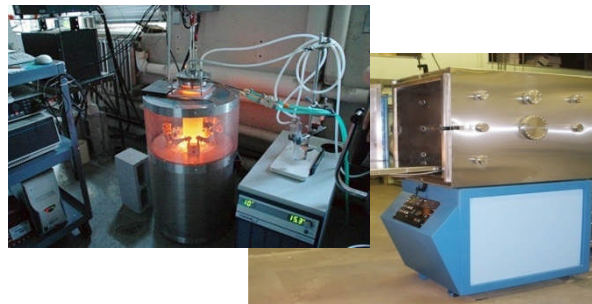
**APL - Hail Detection System & Remote  
Damage Measurement Tool**



**APL - Ice Characterization Camera**



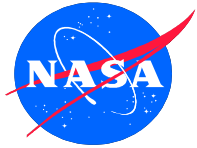
**Cryogenics Lab, STS-119  
ECO Sensor Troubleshooting**



**Applied Chemistry Lab – Oxygen  
Production from Lunar Regolith,  
Electrostatics Lab – Lunar Dust  
Mitigation**



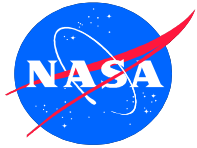
**APL - Orbiter Sling Strain Monitoring  
System**



# ESC Overview (cont'd)

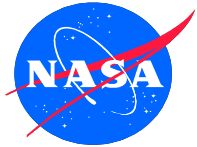
- Technical Services:
  - Laboratories and Developmental Shops Services
  - Software Tools Development and System Administration
  - Minor Modifications
  - Technical Writing and Reports
  - Multimedia and Graphic Design
  - Computer Aided Design (CAD), Computer Aided Engineering (CAE), Simulation
  - Management Documentation
  - Program/Project Management Services
  - Technology Commercialization and Outreach
  - Logistics Services
  - Host Services
  - Technical Reviews, Boards, and Panels Support





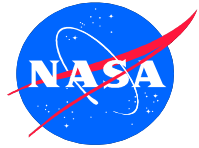
# Industry Day Overview (cont'd)

- Approach to Organizational Conflicts of Interest (OCI):
  - Specific areas of OCI concern :
    - Performing inspection, evaluation, or similar work concerning products and services which Contractor provides to NASA under other NASA contracts, or
    - Developing requirements for the products or services which the Contractor may provide under another contract
  - These concerns touch several PWS elements and especially Space Flight Sustaining Engineering Support
    - Space Flight Systems Engineering
    - Space Flight Systems Analysis
    - Special Studies



# Industry Day Overview (cont'd)

- Approach to Organizational Conflicts of Interest (OCI)(cont'd):
  - Ineligible Sources for ESC Prime, Partners/Team Members or 1<sup>st</sup> Tier Subcontractors:
    - Firms having a financial interest in EGLS Contract
      - Successful EGLS Prime and Partners/Team Members
    - Launch Vehicle and Spacecraft OEM Primes
  - OEM and EGLS 1<sup>st</sup> Tier Subcontractors presumably ineligible
    - Potentially Subject to Mitigation
      - Mitigation requires OCI Analysis and Mitigation Plan subject to Government review & approval
  - Individual proposals and the proposed contract organization and relationships within the EGLS and ESC contracts will also be reviewed to determine if potential OCI concerns are raised at lower-tiered Subcontractors
- Industry comments to the above approach are welcomed



# Thank you for attending!

This presentation, questions & answers, and the attendance list will be posted on the ESC acquisition website at: <http://esc.ksc.nasa.gov>

Stay connected at:

FedBizOpps: [www.fbo.gov](http://www.fbo.gov)

NASA Acquisition Internet Service (NAIS): <http://prod.nais.nasa.gov/>

KSC Procurement Website: <http://procurement.ksc.nasa.gov>

KSC Central Industry Assistance Office: Bldg N6-1009, 321-867-7353